

Circle Homework 2

Answer Section

MULTIPLE CHOICE

1. ANS: B DIF: Moderate REF: 6.2 Circumference of a Circle
 LOC: 8m36 TOP: Measurement KEY: Application

PROBLEM

2. ANS:
 a) $C = \pi d$
 $= \pi \times 0.75 \text{ m}$
 $\approx 2.36 \text{ m}$

The circumference of the tire is about 2.36 m.

$$\begin{aligned} \text{b) Number of rotations} &= \frac{\text{Distance travelled}}{\text{Circumference}} \\ &= \frac{1 \text{ km}}{2.36 \text{ m}} \\ &= \frac{1000 \text{ m}}{2.36 \text{ m}} \\ &\approx 424 \end{aligned}$$

The tire has to rotate about 424 times to travel 1 km.

DIF: Difficult REF: 6.2 Circumference of a Circle LOC: 8m36
 TOP: Measurement KEY: Application

3. ANS:
 Methods may vary. Sample:
 Length of square frame: $4 \times 32 \text{ cm} = 128 \text{ cm} = 1.28 \text{ m}$
 Radius of each circle: $\frac{32 \text{ cm}}{4} = 8 \text{ cm}$
 Circumference of 4 circles: $4 \times (2 \times \pi \times 8) \text{ cm} \approx 2.01 \text{ m}$
 Total length of tubing: $1.28 \text{ m} + 2.01 \text{ m} = 3.29 \text{ m}$

DIF: Difficult REF: 6.2 Circumference of a Circle LOC: 8m36
 TOP: Measurement KEY: Thinking

4. ANS:

Methods may vary. Sample:

$$C = \pi d$$

$$\text{Semicircle on AB: } \pi \times \text{AB} \times \frac{1}{2} = \pi \times 5.0 \text{ cm} \times \frac{1}{2} \approx 7.9 \text{ cm}$$

$$\text{Semicircle on AD: } \pi \times \text{AD} \times \frac{1}{2} = \pi \times 2 \times 5.0 \text{ cm} \times \frac{1}{2} \approx 15.7 \text{ cm}$$

$$\text{Semicircle on DE: } \pi \times \text{DE} \times \frac{1}{2} = \pi \times 4 \times 5.0 \text{ cm} \times \frac{1}{2} \approx 31.4 \text{ cm}$$

$$\text{Length of spiral: } (7.9 + 15.7 + 31.4) \text{ cm} = 55 \text{ cm}$$

The length of the spiral is about 55 cm.

DIF: Difficult

REF: 6.2 Circumference of a Circle

LOC: 8m36

TOP: Measurement

KEY: Thinking